REMARKS

Favorable reconsideration of this application as presently amended and in view of the following discussion is respectfully requested.

Claims 46-95 are pending.

In the outstanding Office Action, Applicants' claim for foreign priority under 35 U.S.C. § 119 was acknowledged; the numbering of the claims was objected to; Claims 41-65 and 70-90 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Kuznetsov (U.S. Patent No. 5,483,111) in view of Elton et al. (U.S. Patent No. 5,036,165, hereinafter Elton); and Claims 66-69 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Kuznetsov in view of Elton and further in view of Redfern (UK 468,827).

Applicants respectfully traverse the objection to the numbering of the claims. Prior to filing the Preliminary Amendment on May 22, 2000, the present specification included Claims 1-45.[1] Thus, it is respectfully submitted that new Claims 46-95 were properly numbered as beginning with the number next following the highest numbered claim previously presented as required by 37 C.F.R. § 1.126. Consequently, it is respectfully requested that the objection be withdrawn and the pending claims be renumbered 46-95. For clarity, however, Applicant will refer to claims within this document as they were referred to in the outstanding Office Action.

The Substitute Specification has been amended by way of the present amendment to correct identified informalities. No new matter has been added.

Claim 41 (corresponding to originally numbered Claim 46) is directed to a high voltage rotating electric machine including a stator, a rotor, and a winding. The winding includes an inner conductor, a cooling mechanism configured to cool the conductor to improve its electrical conductivity, and an insulation including two semiconducting layers, and an insulating layer

[1] See original Claims 41-45 at original specification, at pp. 31-32, and Substitute Specification filed May 22,

positioned therebetween.

Claims 41-65 and 70-90 (corresponding to originally-numbered Claims 46-70 and 75-95) stand rejected under 35 U.S.C. § 103(a) as being unpatentable over a combination of Kuznetsov and Elton.

Kuznetsov is directed to a linear induction machine used, for example, as a propulsion system for a magnetically levitated (maglev) vehicle operating at 200-350 mph and techniques for reducing magnetic drag in the system.[2]

Compared to Kuznetsov , Claim 41 (46) requires *inter alia* a high voltage rotating electric machine having a winding that includes a conductor and a cooling mechanism configured to cool the conductor to improve the electrical conductivity of the conductor. Kuznetsov does not disclose neither a rotating electric machine nor a winding that includes a conductor and a cooling mechanism configured to cool the conductor to improve its electrical conductivity, but rather, is directed to an entirely different type of machine altogether, namely, a high speed linear induction machine used as a propulsion system for a maglev vehicle.

Furthermore, and as recognized in the outstanding Office Action, Kuznetsov does not disclose a winding having two semiconducting layers and an insulating layer positioned therebetween as is also required by Claim 41 (46). In the outstanding Office Action, Elton is asserted in an attempt to cure this deficiency of Kuznetsov.[3] However, Elton does not teach or suggest what is also lacking in Kuznetsov, namely, a rotating electric machine having a winding that includes a conductor and a cooling mechanism configured to cool the conductor to improve its electrical conductivity. Moreover, it is respectfully submitted that Elton does not teach or suggest that the cable described therein could be used as a winding of a rotating electric machine.

2000 at p. 25.

[2] See Kuznetsov, at col. 1, lines 9-12, and col. 3, lines 2-8.

[3] See Office Action dated April 24, 2002, at numbered paragraph 1, pp. 3-4.

Elton is a divisional of Elton et al. (US 4,853,565 herein referred as Elton '565). The invention of Elton '565 is about an insulator material, namely a pyrolized glass fiber layer that may be used in a variety of applications. For example, Elton '565 describes surrounding conventional bar-type windings of an electric machine with a layer of pyrolized glass fiber in electrical contact with ground to minimize corona discharge by providing a path to ground to bleed off built up charges.[4] Elton '565 also describes using a semiconducting pyrolized glass fiber layer to equalize the potential on the exterior of the insulator of a cable.[5] Elton '565 describes yet another application of the pyrolized glass fiber layer as a way to protect electronic components by coating the exterior of a housing with the semiconducting pyrolized glass fiber material.[6]

However, Elton '565 does not teach or suggest that the cable shown in Figure 7 (i.e., the cable of Figure 1 of Elton) could be used as a winding in a rotating electric machine. On the contrary, the cable in Elton '565 is but one of several exemplary applications of the pyrolized glass fiber layer described in Elton '565. It appears to be completely coincidental that Elton '565 uses a winding (also referred to in Elton '565 as an "armature bar") and also a cable (as well as a chassis for an electric circuit) as exemplary uses for the pyrolyzed glass insulator material. There is nothing in Elton '565 to suggest a desirability of using the cable embodiment shown in Figure 7 of Elton '565 as a substitute for a conventional winding in a rotating electric machine.

Consequently, it is respectfully submitted that no matter how Kuznetsov and Elton are combined, the combination fails to teach or suggest the invention defined by Claim 41 (46), or Claims 42-48 (47-53), dependent therefrom. Because Claims 49-90 (54-95) also require a rotating electric machine having a winding that includes a conductor and a cooling

---

[4]Elton '565, column 5, lines 49-63.
[5]Elton '565, column 7, lines 34-37.
[6]Elton '565, column 7, line 48-column 8, line 5.

mechanism configured to improve an electrical conductivity of the conductor, it is respectfully submitted that they also patentably define over a combination of Kuznetsov and Elton.

Redfern is asserted in addition to the combination of Kuznetsov and Elton in the rejection of Claims 66-69 (71-74) for its teaching of a particular arrangement of stator slots. However, Redfern does not cure the deficiencies described above regarding the proposed combination of Kuznetsov and Elton. Consequently, no matter how Kuznetsov and Elton are combined with Redfern, the combination fails to teach or suggest the invention defined by Claims 66-69 (71-74).

Consequently, in view of the present amendment, and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 41-90 (originally numbered Claims 46-95) is patentably distinguishing over the asserted prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Bradley D. Lytle
Registration No. 40,073
Thomas J. Fisher
Registration No. 44,681

22850
Tel. No. (703) 413-3000
Fax No. (703) 413-2220
BDL:TJF:fbl

I:\ATTY\TJF\9847\0056\98470056.AM.DOC

MARKED-UP COPY
Serial No: 09/554,954
Amendment filed on:
1-24-02

IN THE SPECIFICATION

Please amend the paragraph at Page 2, lines 3-6 as follows:

Most synchronous machines have a field winding in the rotor, where the main flux is generated by [do] dc, and an ac winding which is in the stator. Synchronous machines are normally of three-phase design and may be designed with salient poles. This latter type of synchronous machine [have] has an ac winding in the rotor.